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Renewable Energy Sector

APTEL's order on compensation for grid curtailments is a positive for the sector

AUGUST 2021

Highlights

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APTEL's order is likely to act as a deterrent against grid curtailment by discoms & grid operators

Availability of compensation would ease the impact of curtailments on debt metrics for solar and wind IPPs

Timely implementation of this order by the SERCs also remains critical

- The renewable energy (RE) IPPs in the states of Andhra Pradesh (AP) and Tamil Nadu (TN) have witnessed grid curtailments in recent years, which is in contrast to the must-run status accorded to these plants.

- Despite the stricter direction issued by state electricity regulators (SERCs), the Ministry of New & Renewable Energy (MNRE) and courts, the grid curtailments persisted in a few states, given the lack of compensation mechanism in the legacy power purchase agreements (PPAs).

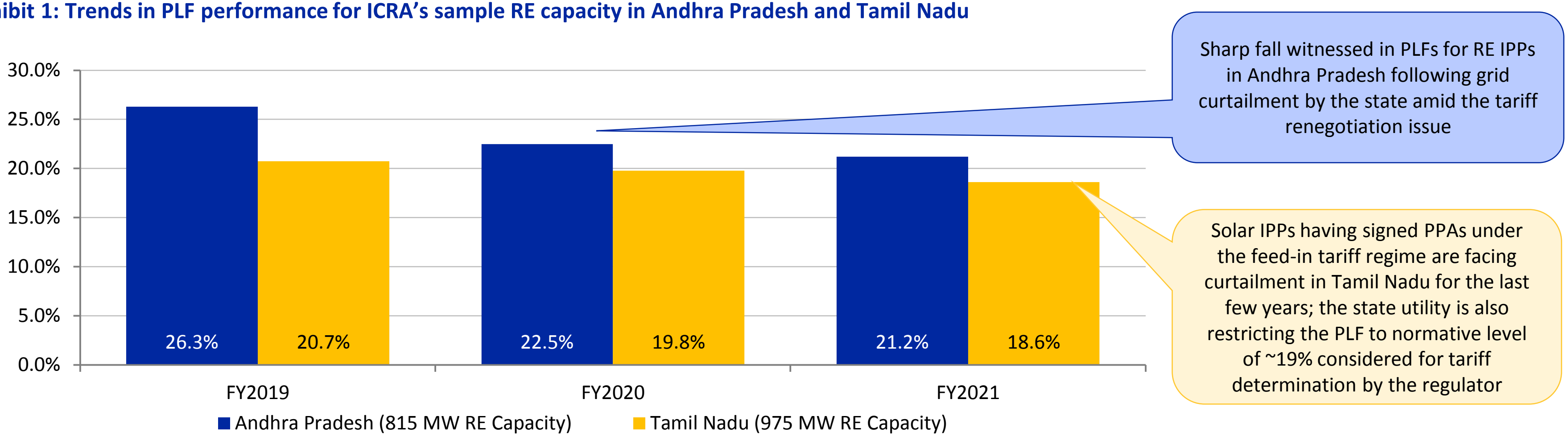
- Based on petition filed by affected solar developers in Tamil Nadu, the Appellate Tribunal for Electricity (APTEL) issued an order in August 2021 stating that the actions of state utility of Tamil Nadu were 'mala fide' in issuing backdown instructions for commercial reasons. The APTEL arrived at this order based on the analysis undertaken by the national grid operator and ordered payment of compensation to the solar IPPs at 75% of PPA tariff.

- The order by APTEL is a positive for the RE sector, acts as a deterrent against grid curtailment by discoms & grid operators. Also, the APTEL issued directions to all state discoms, state electricity regulators and grid operators stating that any curtailment of RE plants (for reasons other than grid security) shall be compensated at PPA tariff. Timely implementation of the order remains key, given that risk of a further challenge to the Supreme Court cannot be ruled out.

- The PPAs under the latest standard bidding guidelines prescribed by the Government of India include clauses for compensation against grid unavailability / grid backdown / due to delay in commissioning transmission infrastructure, thereby providing safeguards against such risks for wind and solar power projects.

Grid curtailments affected the PLFs for RE IPPs in Andhra Pradesh and Tamil Nadu

Exhibit 1: Trends in PLF performance for ICRA's sample RE capacity in Andhra Pradesh and Tamil Nadu



Source: ICRA Research

- The renewable power IPPs in the states of Andhra Pradesh (AP) and Tamil Nadu (TN) have witnessed grid curtailments in recent years which is in contrast to the must-run status accorded to these plants. This is mainly seen for projects having relatively high tariffs i.e. > Rs. 4.5 per unit.
- The grid curtailment in AP is amid the tariff renegotiation attempts by the state government for wind and solar IPPs. In case of TN, the curtailments have been mainly observed for the solar IPPs having signed PPAs at relatively high tariffs unit under the feed-in tariff regime.
- Moreover, the Tamil Nadu state utility is restricting the PLF of solar IPPs at the normative level (considered for tariff determination by the regulator) and excess generation is being curtailed or considered as lapsed. The matter is currently pending before the APTEL.

APTEL allows compensation in lieu of grid curtailment faced by solar projects in TN

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The Solar IPPs through the National Solar Energy Federation of India (NSEFI) approached TNERC* in August 2016 against the curtailment of solar power by TANGEDCO and TNSLDC**

In March 2019, the TNERC issued an order stating that the SLDC must implement must run status for solar IPPs and directed the SLDC to submit a quarterly report on the same

However, the TNERC did not allow the request by the developers on compensation for loss of generation due to grid curtailment citing lack of any such clause in the PPA. This matter was further appealed to APTEL.

In August 2021, the APTEL issued its order stating that the actions of TANGEDCO and TNSLDCL were 'mala fide' in issuing backdown instructions for commercial reasons. This was based on the report submitted by POSOCO^ on grid curtailments in TN

Therefore, APTEL approved compensation for grid backdown faced by solar power projects in TN for the period of Mar'2017 – Jun'17 at 75% of the PPA tariff along with carrying cost of 9.0% to be paid within 60 days from the date of this order

APTEL further directed POSOCO to undertake similar analysis on curtailments for the period up to October 2020. Based on this report, the APTEL directed TNERC to allow compensation for backed down projects at 75% of the PPA tariff

Despite the orders issued by SERC & courts in the past, the grid curtailments persisted in a few states, given the lack of compensation mechanism in the legacy PPAs. In this context, APTEL's order is a positive for the RE sector and is likely to act as a deterrent against grid curtailment by discoms & SLDCs. However, risk of further appeal by TANGEDCO/TNSLDC cannot be rule out.

**TNERC: Tamil Nadu Electricity Regulatory Commission*
***TANGEDCO: Tamil Nadu Generation and Distribution Corporation Limited & TNSLDC: Tamil Nadu State Load Dispatch Centre*
^POSOCO: Power System Operation Corporation Limited; the operator of the national grid

Guidelines issued to SERCs by APTEL on compensation in case of grid curtailment

As a part of this order, APTEL issued directions to all state discoms, state electricity regulators and SLDCs stating that any curtailment of RE plants (for reasons other than grid security) shall be compensated at PPA tariff. The curtailment would not be considered as meant for grid security under the following conditions. This is applicable till formulation of guidelines by forum of regulators or the Central Government

- System frequency in the band of 49.90 Hz – 50.05 Hz
- Voltage level between: 380kV to 420kV for 400kV systems and 198kV to 245kV for 220kV systems
- No network over loading issues or transmission constraints
- Margins available for backing down conventional power plants
- State is overdrawing from the grid or is drawing from grid on short-term basis from the power exchange or other sources, while simultaneously backing down power from intrastate conventional or non-conventional sources

Source: APTEL

Availability of compensation to ease the impact of curtailments on debt metrics

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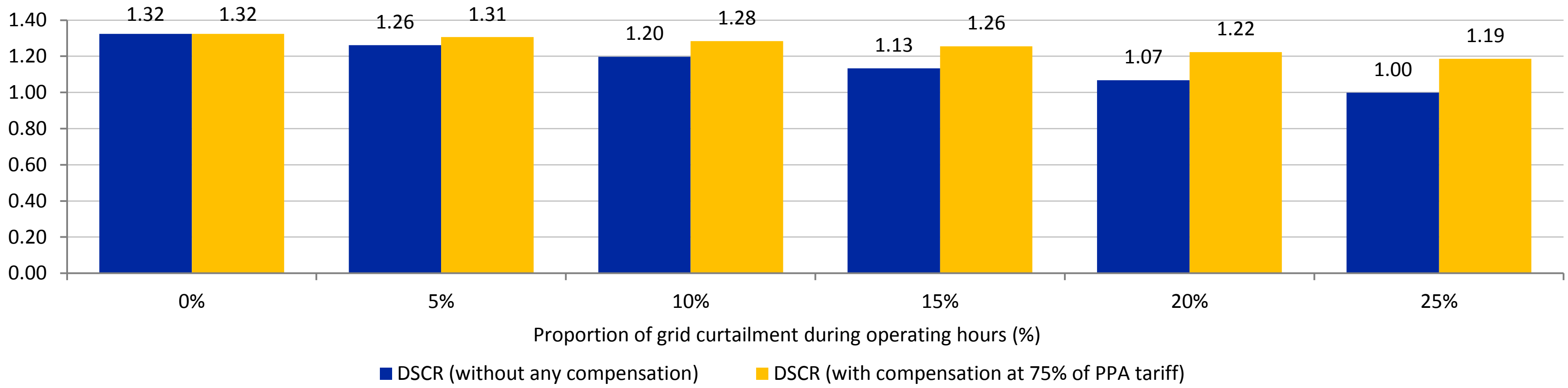
Exhibit 2: Variation in Cumulative DSCR for a solar power project based on extend of grid curtailment with and without compensation

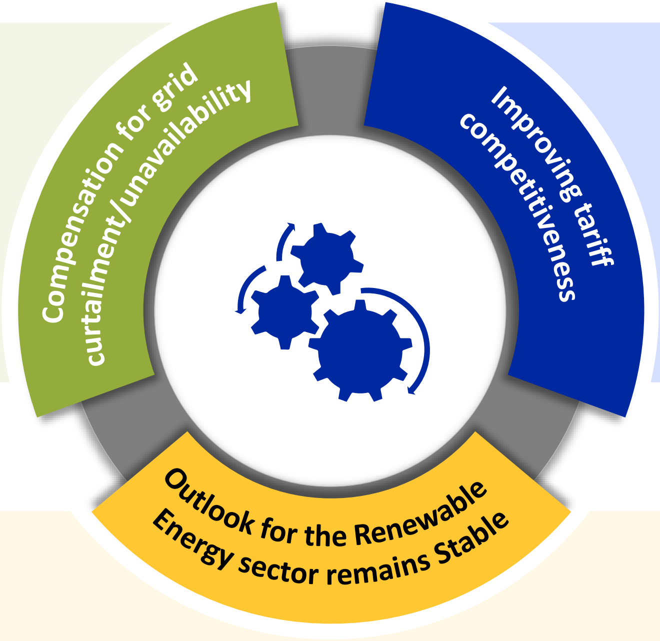


Source: ICRA Research; Analysis here is for a solar power project assuming curtailment during the day as a proportion of operating hours
Assumptions: Capital Cost of the project at Rs. 6.5 crore per MW funded by debt and equity of 75:25; cost of debt at 9.5%, tariff at Rs. 5.0 per unit and AC:DC ratio of 1.1

- The exhibit captures the impact of grid curtailment on the debt servicing metrics of a solar power project based on the extent of curtailment during the operating hours. As the grid curtailment increases from 5% to 25%, there is a significant impact on the debt-servicing capability of the project
- However, the availability of compensation at 75% of the PPA tariff would ease the extent of impact. For instance, under a 15% curtailment scenario, the availability of compensation would reduce the impact on cumulative DSCR by 13 bps against a scenario without compensation for a solar project.

Improving tariff competitiveness and compensation clause in latest PPAs key mitigating factors against grid curtailment for wind and solar IPPs

The model PPAs under the latest standard bidding guidelines prescribed by the Government of India include clauses for compensation against grid unavailability / grid backdown / due to delay in commissioning transmission infrastructure



Tariff offered by solar and wind power developers (< Rs. 3.0 per unit) remains highly competitive against the marginal variable cost of generation (bottom 25% of the merit order list) from thermal generation stations in the key states

- Favourable policy support
- Strong intermediate procurers
- Large project pipeline
- Backing from strong sponsors

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Thank You!